

REMARKS

Claims 12, 13, 21-24 and 33-35 are pending.

Claim Rejections – 35 USC § 112, second paragraph

2. Claims 12, 13, 21-24 and 33-35 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 12 and 33-35 are rejected based on the terms “favorably ranked,” “determining a criteria” and “selected” being unclear.

The claims have been amended for technical clarity, and the disputed terms removed. Accordingly, the rejections should be withdrawn.

Claim Rejections – 35 USC § 112, first paragraph

3. Claims 12, 13, 21-24 and 33-35 are rejected under 35 USC § 112, first paragraph, as containing matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Specifically, the Examiner stated “favorably ranked primary protein variants” is new matter. For technical clarity, without admitting the propriety of the rejection, and for the purposes of expediting the prosecution, the term “favorably” has been removed. As the Examiner appreciates, the application is replete with references to “ranking”. For example, as shown in Example 1 of the specification, applicants ranked a primary library of 1000 sequences based upon energy scores, see paragraph [0074] of the specification. Using lowest energy scores are just one way to rank protein variants.

Further, the Examiner states “the instantly claimed method provides for generating a secondary library of as yet undetermined structure, function or biological significance which is obtained by a random combination of amino acid residues derived from a plurality of variant positions.” Applicants respectfully submit that this method of generating a secondary library does, in fact, provide concrete, “real world” utility. The secondary library is enriched for variants with desired properties relative to a random variant library.

Claim Rejections – 35 USC §§ 101/112-1

4. Claims 12, 13, 21-24 and 33-35 are rejected under 35 USC § 101 as not being supported by either a specific asserted utility or a well established utility.

As stated in the USPTO "Interim Guidelines for Examination of Patent Applications for Patentable Subject Matter Eligibility," Section II.A.:

The claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research. [Citations omitted.]

The present invention does contain "real world" value – and has been used by applicants to produce useful, concrete and tangible results. As seen in Example 1, Table 4, the computation method of present invention reduced the total number of variants in the library from 419,857 to 210. The enrichment of the library for good variants is in itself a useful real world result. Further, recombining the primary library to form a secondary library creates additional variants that are more likely to be favorable than a purely random library. Again, this enriched library is a very useful and very beneficial "real world" result.

Double Patenting

8. Claims 12 and 21-24 and 33-35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 19-29 of co-pending application no. 09/927790.

Applicant respectfully requests that the claim scope be reevaluated once the claims of both applications are in condition for allowance.

The Applicants submit that in light of the above-amendment and argument, the claims are now in condition for allowance and an early notification of such is respectfully solicited.

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